

METHOD OF SIGNAL ACQUISITION AND MOBILE STATION

USING THE METHOD

ABSTRACT

[44] Briefly, one way to minimize time and frequency uncertainties when synchronizing between a transmitter and a receiver is to use a position determining method such as global positioning system (GPS) to determine position and velocity. If position can be determined the delay between the transmitter and receiver can be estimated. Additionally, position information can be used to determine the probability that the signal received will be a reflected signal. If the transmitter and receiver are located in an area with obstructions between them then it is more likely that a signal received will be a reflected signal. If it is determined that it is likely that the signal received will be a reflected signal then the receiver can attempt to acquire the transmitted signal over a wider range of propagation delay possibilities. Additionally, another uncertainty that complicates synchronization is uncertainty regarding frequency. One cause for frequency uncertainty is Doppler shift due to movement of the transmitter or receiver. Using a position determining method such as GPS to determine velocity allows the receiver to estimate the Doppler frequency shift and adjust for it.